ABSTRACT OF THE INVENTION

Disclosed are methods according to which a local computing device enables remote devices to initiate traffic flows with it by sending messages addressed to the remote devices. If the local device is behind one or more NATs, the NATs intercept the messages and create address mappings between the local and remote devices. When the remote devices initiate traffic flows, the NATs use these pre-established mappings to send the traffic to the local device. Before sending the initial message, the local device discovers from which remote devices it wishes to accept traffic. In one discovery method, the devices each communicate with a directory service. The service records which devices are willing to communicate with which others and provides that information to the devices. Each device induces a NAT mapping by sending a message to the other. Once discovery is complete, traffic flows between the devices without going through the directory service.